

Please amend the claims as follows. This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1-25 (Cancelled):

Claim 26 (New): A method for fabricating a spacer of a gate structure, the method comprising:

performing a first etch process, the first etch process configured to remove a portion of a spacer layer, leaving a thin spacer layer, the first etch process configured to implement an interferometry endpoint (IEP) detection method to detect the removal of the portion of the spacer layer; and

performing a second etch process implementing a second etchant gas, the second etch process including monitoring by a non-IEP etch endpoint process, the second etch process configured to remove the thin spacer layer, leaving the spacer for the gate structure,

wherein the second etchant gas is configured to be selected from one of a combination of O₂, HBr, and SF₆ and a combination of C₂F₆, CH₂F₂, and O₂ wherein a percentage by volume of C₂F₆ is configured to range between approximately 10% and 22%, a percentage by volume of CH₂F₂ is configured to range between approximately 37% and 58%, and a percentage by volume of O₂ is configured to range between approximately 29% and 48%.

Claim 27 (New): The method as recited in claims 26, wherein the first etch process is performed implementing a first etchant gas.

Claim 28 (New): The method as recited in claim 26, further comprising:

discontinuing the first etch process upon removing the portion of the spacer layer, leaving the thin spacer layer.

Claims 29 (New): The method as recited in claim 26, further comprising:

discontinuing the second etch process in response to monitoring the removal of the thin spacer layer by the non-IEP etch endpoint process and when the second etch process has continued for a predetermined period of time.

Claim 30 (New): The method of claim 26, wherein the IEP etch endpoint monitoring method is configured to monitor a photon beam reflected by the spacer layer so as to determine the thickness of an etch depth during the first etch operation implementing a distance between consecutive maximum intensities.

Claim 31 (New): The method of claim 30, wherein the non-IEP etch endpoint monitoring method is optical emission spectroscopy (OES).

Claim 32 (New): The method of claim 26, wherein the spacer layer is a nitride layer.

Claim 33 (New): A method for fabricating a silicon nitride spacer, the method comprising:

performing a first etch process implementing a first etchant gas in a plasma chamber, the first etch process configured to control a removal of a portion of a silicon nitride layer from over a surface of a substrate by monitoring a light reflected by the silicon nitride layer, the first etch process further configured to leave a thin silicon nitride layer over the surface of the substrate and to maintain a thickness of the thin silicon nitride layer substantially uniform throughout the surface of the substrate and a gate structure formed thereon; and

performing a second etch process implementing a second etchant gas, the second etch process including monitoring an optical signal produced by a second plasma during the second etch operation, the second etch process configured to remove the thin silicon nitride layer, leaving the silicon nitride spacer for the gate structure, the second etchant gas configured to be selected from one of a combination of O₂, HBr, and SF₆ and a combination of C₂F₆, CH₂F₂, and O₂ wherein a percentage by volume of C₂F₆ is configured to range between approximately 10% and 22%, a percentage by volume of CH₂F₂ is configured to range between approximately 37% and 58%, and a percentage by volume of O₂ is configured to range between approximately 29% and 48%.

Claim 34 (New): The method as recited in claim 33, further comprising:

purging a first plasma content defined within the plasma chamber.

Claim 35 (New): The method as recited in claim 33, wherein the second etch process is performed for a predetermined period of time.

Claim 36 (New): The method as recited in claim 33, wherein the first etch operation and the second etch operation are performed *in situ*.

Claim 37 (New): The method of claim 33, wherein monitoring the light reflected by the silicon nitride layer includes,

directing a photon beam onto the silicon nitride layer;

observing a reflected photon beam reflected by the silicon nitride layer; and

determining an etch depth as the first etch operation proceeds.

Claim 38 (New): The method of claim 37, wherein determining the etch depth includes:

monitoring an intensity of the reflected photon beam;

determining a distance between a pair of consecutive maximum intensities; and

determining the thickness of the etch depth implementing the distance between consecutive maximum intensities.

Claim 39 (New): A method for fabricating a nitride spacer of a gate structure, the method comprising:

performing a first etch process using a first etchant gas, the first etch process implementing an interferometry endpoint (IEP) detection process to detect a removal of a portion of a nitride spacer layer;

discontinuing the first etch process upon removing the portion of the nitride spacer layer, leaving a thin nitride spacer layer;

performing a second etch process using a second etchant gas implementing optical emission spectroscopy (OES) endpoint monitoring process, the second etch process

configured to remove the thin nitride spacer layer, leaving the nitride spacer for the gate structure, the second etchant gas configured to be selected from one of a combination of O₂, HBr, and SF₆ and a combination of C₂F₆, CH₂F₂, and O₂ wherein a percentage by volume of C₂F₆ is configured to range between approximately 10% and 22%, a percentage by volume of CH₂F₂ is configured to range between approximately 37% and 58%, and a percentage by volume of O₂ is configured to range between approximately 29% and 48%; and

discontinuing the second etch process in response to the OES monitoring process.

Claim 40 (New): The method of claim 39, wherein a thickness of the thin nitride spacer layer is configured to range between approximately about 50 Å and 300 Å.

Claim 41 (New): The method of claim 39, wherein a thickness of the thin nitride layer is configured to range between approximately about 100 Å and 200 Å.

Claim 42 (New): The method of claim 39, wherein a thickness of the thin nitride spacer layer is configured to be about 100 Å.

Claim 43 (New): The method of claim 39, wherein the first etchant gas is configured to be one of a combination of C₂F₆, CH₂F₂, and O₂, a combination of CF₄, CH₂F₂, and O₂, and a combination of CF₄, HBr, and O₂.